SEQUENCE LISTING

<110> Tryggvason, Karl
Salo, Sirpa

<120> Use of antibodies to the gamma 2 chain of laminin 5 to inhibit tumor growth and metastasis

<130> 02-1147-PCT2

<150> 60/523,895
<151> 2003-11-20

<160> 27

<170> PatentIn version 3.3

<210> 1
<211> 5200
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (118)..(3699)

<220>
<221> sig_peptide
<222> (118)..(183)

<400> 1
gaccacctga tcgaaggaaa aggaaggcac agcggagcgc agagtgagaa ccaccaaccg 60

aggcgccggg cagcgacccc tgcagcggag acagagactg agcggcccgg caccgcc 117

atg cct gcg ctc tgg ctg ggc tgc tgc ctc tgc ttc tcg ctc ctc ctg 165
Met Pro Ala Leu Trp Leu Gly Cys Cys Leu Cys Phe Ser Leu Leu Leu
1 5 10 15

ccc gca gcc cgg gcc acc tcc agg agg gaa gtc tgt gat tgc aat ggg 213
Pro Ala Ala Arg Ala Thr Ser Arg Arg Glu Val Cys Asp Cys Asn Gly
20 25 30

aag tcc agg cag tgt atc ttt gat cgg gaa ctt cac aga caa act ggt 261
Lys Ser Arg Gln Cys Ile Phe Asp Arg Glu Leu His Arg Gln Thr Gly
35 40 45

aat gga ttc cgc tgc ctc aac tgc aat gac aac act gat ggc att cac 309
Asn Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn Thr Asp Gly Ile His
50 55 60

tgc gag aag tgc aag aat ggc ttt tac cgg cac aga gaa agg gac cgc 357
Cys Glu Lys Cys Lys Asn Gly Phe Tyr Arg His Arg Glu Arg Asp Arg
65 70 75 80

tgt ttg ccc tgc aat tgt aac tcc aaa ggt tct ctt agt gct cga tgt 405
Cys Leu Pro Cys Asn Cys Asn Ser Lys Gly Ser Leu Ser Ala Arg Cys
85 90 95

gac aac tct gga cgg tgc agc tgt aaa cca ggt gtg aca gga gcc aga 453
Asp Asn Ser Gly Arg Cys Ser Cys Lys Pro Gly Val Thr Gly Ala Arg
100 105 110

tgc gac cga tgt ctg cca ggc ttc cac atg ctc acg gat gcg ggg tgc 501
Cys Asp Arg Cys Leu Pro Gly Phe His Met Leu Thr Asp Ala Gly Cys

```
        115                 120                 125

acc caa gac cag aga ctg cta gac tcc aag tgt gac tgt gac cca gct      549
Thr Gln Asp Gln Arg Leu Leu Asp Ser Lys Cys Asp Cys Asp Pro Ala
    130                 135                 140

ggc atc gca ggg ccc tgt gac gcg ggc cgc tgt gtc tgc aag cca gct      597
Gly Ile Ala Gly Pro Cys Asp Ala Gly Arg Cys Val Cys Lys Pro Ala
145                 150                 155                 160

gtt act gga gaa cgc tgt gat agg tgt cga tca ggt tac tat aat ctg      645
Val Thr Gly Glu Arg Cys Asp Arg Cys Arg Ser Gly Tyr Tyr Asn Leu
                165                 170                 175

gat ggg ggg aac cct gag ggc tgt acc cag tgt ttc tgc tat ggg cat      693
Asp Gly Gly Asn Pro Glu Gly Cys Thr Gln Cys Phe Cys Tyr Gly His
            180                 185                 190

tca gcc agc tgc cgc agc tct gca gaa tac agt gtc cat aag atc acc      741
Ser Ala Ser Cys Arg Ser Ser Ala Glu Tyr Ser Val His Lys Ile Thr
        195                 200                 205

tct acc ttt cat caa gat gtt gat ggc tgg aag gct gtc caa cga aat      789
Ser Thr Phe His Gln Asp Val Asp Gly Trp Lys Ala Val Gln Arg Asn
    210                 215                 220

ggg tct cct gca aag ctc caa tgg tca cag cgc cat caa gat gtg ttt      837
Gly Ser Pro Ala Lys Leu Gln Trp Ser Gln Arg His Gln Asp Val Phe
225                 230                 235                 240

agc tca gcc caa cga cta gat cct gtc tat ttt gtg gct cct gcc aaa      885
Ser Ser Ala Gln Arg Leu Asp Pro Val Tyr Phe Val Ala Pro Ala Lys
                245                 250                 255

ttt ctt ggg aat caa cag gtg agc tat ggg caa agc ctg tcc ttt gac      933
Phe Leu Gly Asn Gln Gln Val Ser Tyr Gly Gln Ser Leu Ser Phe Asp
            260                 265                 270

tac cgt gtg gac aga gga ggc aga cac cca tct gcc cat gat gtg atc      981
Tyr Arg Val Asp Arg Gly Gly Arg His Pro Ser Ala His Asp Val Ile
        275                 280                 285

ctg gaa ggt gct ggt cta cgg atc aca gct ccc ttg atg cca ctt ggc     1029
Leu Glu Gly Ala Gly Leu Arg Ile Thr Ala Pro Leu Met Pro Leu Gly
    290                 295                 300

aag aca ctg cct tgt ggg ctc acc aag act tac aca ttc agg tta aat     1077
Lys Thr Leu Pro Cys Gly Leu Thr Lys Thr Tyr Thr Phe Arg Leu Asn
305                 310                 315                 320

gag cat cca agc aat aat tgg agc ccc cag ctg agt tac ttt gag tat     1125
Glu His Pro Ser Asn Asn Trp Ser Pro Gln Leu Ser Tyr Phe Glu Tyr
                325                 330                 335

cga agg tta ctg cgg aat ctc aca gcc ctc cgc atc cga gct aca tat     1173
Arg Arg Leu Leu Arg Asn Leu Thr Ala Leu Arg Ile Arg Ala Thr Tyr
            340                 345                 350

gga gaa tac agt act ggg tac att gac aat gtg acc ctg att tca gcc     1221
Gly Glu Tyr Ser Thr Gly Tyr Ile Asp Asn Val Thr Leu Ile Ser Ala
        355                 360                 365

cgc cct gtc tct gga gcc cca gca ccc tgg gtt gaa cag tgt ata tgt     1269
Arg Pro Val Ser Gly Ala Pro Ala Pro Trp Val Glu Gln Cys Ile Cys
    370                 375                 380
```

```
cct gtt ggg tac aag ggg caa ttc tgc cag gat tgt gct tct ggc tac     1317
Pro Val Gly Tyr Lys Gly Gln Phe Cys Gln Asp Cys Ala Ser Gly Tyr
385                 390                 395                 400

aag aga gat tca gcg aga ctg ggg cct ttt ggc acc tgt att cct tgt     1365
Lys Arg Asp Ser Ala Arg Leu Gly Pro Phe Gly Thr Cys Ile Pro Cys
                405                 410                 415

aac tgt caa ggg gga ggg gcc tgt gat cca gac aca gga gat tgt tat     1413
Asn Cys Gln Gly Gly Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys Tyr
            420                 425                 430

tca ggg gat gag aat cct gac att gag tgt gct gac tgc cca att ggt     1461
Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly
        435                 440                 445

ttc tac aac gat ccg cac gac ccc cgc agc tgc aag cca tgt ccc tgt     1509
Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys
    450                 455                 460

cat aac ggg ttc agc tgc tca gtg att ccg gag acg gag gag gtg gtg     1557
His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val
465                 470                 475                 480

tgc aat aac tgc cct ccc ggg gtc acc ggt gcc cgc tgt gag ctc tgt     1605
Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys
                485                 490                 495

gct gat ggc tac ttt ggg gac ccc ttt ggt gaa cat ggc cca gtg agg     1653
Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg
            500                 505                 510

cct tgt cag ccc tgt caa tgc aac agc aat gtg gac ccc agt gcc tct     1701
Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser
        515                 520                 525

ggg aat tgt gac cgg ctg aca ggc agg tgt ttg aag tgt atc cac aac     1749
Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn
    530                 535                 540

aca gcc ggc atc tac tgc gac cag tgc aaa gca ggc tac ttc ggg gac     1797
Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp
545                 550                 555                 560

cca ttg gct ccc aac cca gca gac aag tgt cga gct tgc aac tgt aac     1845
Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn
                565                 570                 575

ccc atg ggc tca gag cct gta gga tgt cga agt gat ggc acc tgt gtt     1893
Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val
            580                 585                 590

tgc aag cca gga ttt ggt ggc ccc aac tgt gag cat gga gca ttc agc     1941
Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala Phe Ser
        595                 600                 605

tgt cca gct tgc tat aat caa gtg aag att cag atg gat cag ttt atg     1989
Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln Phe Met
    610                 615                 620

cag cag ctt cag aga atg gag gcc ctg att tca aag gct cag ggt ggt     2037
Gln Gln Leu Gln Arg Met Glu Ala Leu Ile Ser Lys Ala Gln Gly Gly
625                 630                 635                 640

gat gga gta gta cct gat aca gag ctg gaa ggc agg atg cag cag gct     2085
Asp Gly Val Val Pro Asp Thr Glu Leu Glu Gly Arg Met Gln Gln Ala
```

```
                645                 650                 655

gag cag gcc ctt cag gac att ctg aga gat gcc cag att tca gaa ggt     2133
Glu Gln Ala Leu Gln Asp Ile Leu Arg Asp Ala Gln Ile Ser Glu Gly
            660                 665                 670

gct agc aga tcc ctt ggt ctc cag ttg gcc aag gtg agg agc caa gag     2181
Ala Ser Arg Ser Leu Gly Leu Gln Leu Ala Lys Val Arg Ser Gln Glu
        675                 680                 685

aac agc tac cag agc cgc ctg gat gac ctc aag atg act gtg gaa aga     2229
Asn Ser Tyr Gln Ser Arg Leu Asp Asp Leu Lys Met Thr Val Glu Arg
    690                 695                 700

gtt cgg gct ctg gga agt cag tac cag aac cga gtt cgg gat act cac     2277
Val Arg Ala Leu Gly Ser Gln Tyr Gln Asn Arg Val Arg Asp Thr His
705                 710                 715                 720

agg ctc atc act cag atg cag ctg agc ctg gca gaa agt gaa gct tcc     2325
Arg Leu Ile Thr Gln Met Gln Leu Ser Leu Ala Glu Ser Glu Ala Ser
                725                 730                 735

ttg gga aac act aac att cct gcc tca gac cac tac gtg ggg cca aat     2373
Leu Gly Asn Thr Asn Ile Pro Ala Ser Asp His Tyr Val Gly Pro Asn
            740                 745                 750

ggc ttt aaa agt ctg gct cag gag gcc aca aga tta gca gaa agc cac     2421
Gly Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Leu Ala Glu Ser His
        755                 760                 765

gtt gag tca gcc agt aac atg gag caa ctg aca agg gaa act gag gac     2469
Val Glu Ser Ala Ser Asn Met Glu Gln Leu Thr Arg Glu Thr Glu Asp
    770                 775                 780

tat tcc aaa caa gcc ctc tca ctg gtg cgc aag gcc ctg cat gaa gga     2517
Tyr Ser Lys Gln Ala Leu Ser Leu Val Arg Lys Ala Leu His Glu Gly
785                 790                 795                 800

gtc gga agc gga agc ggt agc ccg gac ggt gct gtg gtg caa ggg ctt     2565
Val Gly Ser Gly Ser Gly Ser Pro Asp Gly Ala Val Val Gln Gly Leu
                805                 810                 815

gtg gaa aaa ttg gag aaa acc aag tcc ctg gcc cag cag ttg aca agg     2613
Val Glu Lys Leu Glu Lys Thr Lys Ser Leu Ala Gln Gln Leu Thr Arg
            820                 825                 830

gag gcc act caa gcg gaa att gaa gca gat agg tct tat cag cac agt     2661
Glu Ala Thr Gln Ala Glu Ile Glu Ala Asp Arg Ser Tyr Gln His Ser
        835                 840                 845

ctc cgc ctc ctg gat tca gtg tct ccg ctt cag gga gtc agt gat cag     2709
Leu Arg Leu Leu Asp Ser Val Ser Pro Leu Gln Gly Val Ser Asp Gln
    850                 855                 860

tcc ttt cag gtg gaa gaa gca aag agg atc aaa caa aaa gcg gat tca     2757
Ser Phe Gln Val Glu Glu Ala Lys Arg Ile Lys Gln Lys Ala Asp Ser
865                 870                 875                 880

ctc tca agc ctg gta acc agg cat atg gat gag ttc aag cgt aca caa     2805
Leu Ser Ser Leu Val Thr Arg His Met Asp Glu Phe Lys Arg Thr Gln
                885                 890                 895

aag aat ctg gga aac tgg aaa gaa gaa gca cag cag ctc tta cag aat     2853
Lys Asn Leu Gly Asn Trp Lys Glu Glu Ala Gln Gln Leu Leu Gln Asn
            900                 905                 910
```

```
gga aaa agt ggg aga gag aaa tca gat cag ctg ctt tcc cgt gcc aat     2901
Gly Lys Ser Gly Arg Glu Lys Ser Asp Gln Leu Leu Ser Arg Ala Asn
        915                 920                 925

ctt gct aaa agc aga gca caa gaa gca ctg agt atg ggc aat gcc act     2949
Leu Ala Lys Ser Arg Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr
    930                 935                 940

ttt tat gaa gtt gag agc atc ctt aaa aac ctc aga gag ttt gac ctg     2997
Phe Tyr Glu Val Glu Ser Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu
945                 950                 955                 960

cag gtg gac aac aga aaa gca gaa gct gaa gaa gcc atg aag aga ctc     3045
Gln Val Asp Asn Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu
                965                 970                 975

tcc tac atc agc cag aag gtt tca gat gcc agt gac aag acc cag caa     3093
Ser Tyr Ile Ser Gln Lys Val Ser Asp Ala Ser Asp Lys Thr Gln Gln
            980                 985                 990

gca gaa aga gcc ctg ggg agc gct  gct gct gat gca cag  agg gca aag   3141
Ala Glu Arg Ala Leu Gly Ser Ala  Ala Ala Asp Ala Gln  Arg Ala Lys
        995                 1000                1005

aat ggg  gcc ggg gag gcc ctg  gaa atc tcc agt gag  att gaa cag      3186
Asn Gly  Ala Gly Glu Ala Leu  Glu Ile Ser Ser Glu  Ile Glu Gln
    1010                1015                1020

gag att  ggg agt ctg aac ttg  gaa gcc aat gtg aca  gca gat gga      3231
Glu Ile  Gly Ser Leu Asn Leu  Glu Ala Asn Val Thr  Ala Asp Gly
    1025                1030                1035

gcc ttg  gcc atg gaa aag gga  ctg gcc tct ctg aag  agt gag atg      3276
Ala Leu  Ala Met Glu Lys Gly  Leu Ala Ser Leu Lys  Ser Glu Met
    1040                1045                1050

agg gaa  gtg gaa gga gag ctg  gaa agg aag gag ctg  gag ttt gac      3321
Arg Glu  Val Glu Gly Glu Leu  Glu Arg Lys Glu Leu  Glu Phe Asp
    1055                1060                1065

acg aat  atg gat gca gta cag  atg gtg att aca gaa  gcc cag aag      3366
Thr Asn  Met Asp Ala Val Gln  Met Val Ile Thr Glu  Ala Gln Lys
    1070                1075                1080

gtt gat  acc aga gcc aag aac  gct ggg gtt aca atc  caa gac aca      3411
Val Asp  Thr Arg Ala Lys Asn  Ala Gly Val Thr Ile  Gln Asp Thr
    1085                1090                1095

ctc aac  aca tta gac ggc ctc  ctg cat ctg atg gac  cag cct ctc      3456
Leu Asn  Thr Leu Asp Gly Leu  Leu His Leu Met Asp  Gln Pro Leu
    1100                1105                1110

agt gta  gat gaa gag ggg ctg  gtc tta ctg gag cag  aag ctt tcc      3501
Ser Val  Asp Glu Glu Gly Leu  Val Leu Leu Glu Gln  Lys Leu Ser
    1115                1120                1125

cga gcc  aag acc cag atc aac  agc caa ctg cgg ccc  atg atg tca      3546
Arg Ala  Lys Thr Gln Ile Asn  Ser Gln Leu Arg Pro  Met Met Ser
    1130                1135                1140

gag ctg  gaa gag agg gca cgt  cag cag agg ggc cac  ctc cat ttg      3591
Glu Leu  Glu Glu Arg Ala Arg  Gln Gln Arg Gly His  Leu His Leu
    1145                1150                1155

ctg gag  aca agc ata gat ggg  att ctg gct gat gtg  aag aac ttg      3636
Leu Glu  Thr Ser Ile Asp Gly  Ile Leu Ala Asp Val  Lys Asn Leu
```

1160 1165 1170

gag aac att agg gac aac ctg ccc cca ggc tgc tac aat acc cag 3681
Glu Asn Ile Arg Asp Asn Leu Pro Pro Gly Cys Tyr Asn Thr Gln
1175 1180 1185

gct ctt gag caa cag tga agctgccata aatatttctc aactgaggtt 3729
Ala Leu Glu Gln Gln
1190

cttgggatac agatctcagg gctcgggagc catgtcatgt gagtgggtgg gatggggaca 3789

tttgaacatg tttaatgggt atgctcaggt caactgacct gaccccattc ctgatcccat 3849

ggccaggtgg ttgtcttatt gcaccatact ccttgcttcc tgatgctggg catgaggcag 3909

ataggcactg gtgtgagaat gatcaaggat ctggacccca aagatagact ggatggaaag 3969

acaaactgca caggcagatg tttgcctcat aatagtcgta agtggagtcc tggaatttgg 4029

acaagtgctg ttgggatata gtcaacttat tctttgagta atgtgactaa aggaaaaaac 4089

tttgactttg cccaggcatg aaattcttcc taatgtcaga acagagtgca acccagtcac 4149

actgtggcca gtaaaatact attgcctcat attgtcctct gcaagcttct tgctgatcag 4209

agttcctcct acttacaacc cagggtgtga acatgttctc cattttcaag ctggaagaag 4269

tgagcagtgt tggagtgagg acctgtaagg caggcccatt cagagctatg gtgcttgctg 4329

gtgcctgcca ccttcaagtt ctggacctgg gcatgacatc ctttctttta atgatgccat 4389

ggcaacttag agattgcatt tttattaaag catttcctac cagcaaagca aatgttggga 4449

aagtatttac tttttcggtt tcaaagtgat agaaaagtgt ggcttgggca ttgaaagagg 4509

taaaattctc tagatttatt agtcctaatt caatcctact tttcgaacac caaaaatgat 4569

gcgcatcaat gtattttatc ttattttctc aatctcctct ctctttcctc cacccataat 4629

aagagaatgt tcctactcac acttcagctg ggtcacatcc atccctccat tcatccttcc 4689

atccatcttt ccatccatta cctccatcca tccttccaac atatatttat tgagtaccta 4749

ctgtgtgcca ggggctggtg ggacagtggt gacatagtct ctgccctcat agagttgatt 4809

gtctagtgag gaagacaagc atttttaaaa aataaattta aacttacaaa ctttgtttgt 4869

cacaagtggt gtttattgca ataaccgctt ggtttgcaac ctctttgctc aacagaacat 4929

atgttgcaag accctcccat gggcactgag tttggcaagg atgacagagc tctgggttgt 4989

gcacatttct ttgcattcca gcgtcactct gtgccttcta caactgattg caacagactg 5049

ttgagttatg ataacaccag tgggaattgc tggaggaacc agaggcactt ccaccttggc 5109

tgggaagact atggtgctgc cttgcttctg tatttccttg gattttcctg aaagtgtttt 5169

taaataaaga acaattgtta gatgccaaaa a 5200

<210> 2
<211> 1193
<212> PRT
<213> Homo sapiens

<400> 2

```
Met Pro Ala Leu Trp Leu Gly Cys Cys Leu Cys Phe Ser Leu Leu Leu
1               5                  10                  15

Pro Ala Ala Arg Ala Thr Ser Arg Arg Glu Val Cys Asp Cys Asn Gly
            20                  25                  30

Lys Ser Arg Gln Cys Ile Phe Asp Arg Glu Leu His Arg Gln Thr Gly
        35                  40                  45

Asn Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn Thr Asp Gly Ile His
    50                  55                  60

Cys Glu Lys Cys Lys Asn Gly Phe Tyr Arg His Arg Glu Arg Asp Arg
65                  70                  75                  80

Cys Leu Pro Cys Asn Cys Asn Ser Lys Gly Ser Leu Ser Ala Arg Cys
                85                  90                  95

Asp Asn Ser Gly Arg Cys Ser Cys Lys Pro Gly Val Thr Gly Ala Arg
            100                 105                 110

Cys Asp Arg Cys Leu Pro Gly Phe His Met Leu Thr Asp Ala Gly Cys
        115                 120                 125

Thr Gln Asp Gln Arg Leu Leu Asp Ser Lys Cys Asp Cys Asp Pro Ala
    130                 135                 140

Gly Ile Ala Gly Pro Cys Asp Ala Gly Arg Cys Val Cys Lys Pro Ala
145                 150                 155                 160

Val Thr Gly Glu Arg Cys Asp Arg Cys Arg Ser Gly Tyr Tyr Asn Leu
                165                 170                 175

Asp Gly Gly Asn Pro Glu Gly Cys Thr Gln Cys Phe Cys Tyr Gly His
            180                 185                 190

Ser Ala Ser Cys Arg Ser Ser Ala Glu Tyr Ser Val His Lys Ile Thr
        195                 200                 205

Ser Thr Phe His Gln Asp Val Asp Gly Trp Lys Ala Val Gln Arg Asn
    210                 215                 220

Gly Ser Pro Ala Lys Leu Gln Trp Ser Gln Arg His Gln Asp Val Phe
225                 230                 235                 240

Ser Ser Ala Gln Arg Leu Asp Pro Val Tyr Phe Val Ala Pro Ala Lys
                245                 250                 255
```

Phe Leu Gly Asn Gln Gln Val Ser Tyr Gly Gln Ser Leu Ser Phe Asp
260 265 270

Tyr Arg Val Asp Arg Gly Gly Arg His Pro Ser Ala His Asp Val Ile
275 280 285

Leu Glu Gly Ala Gly Leu Arg Ile Thr Ala Pro Leu Met Pro Leu Gly
290 295 300

Lys Thr Leu Pro Cys Gly Leu Thr Lys Thr Tyr Thr Phe Arg Leu Asn
305 310 315 320

Glu His Pro Ser Asn Asn Trp Ser Pro Gln Leu Ser Tyr Phe Glu Tyr
325 330 335

Arg Arg Leu Leu Arg Asn Leu Thr Ala Leu Arg Ile Arg Ala Thr Tyr
340 345 350

Gly Glu Tyr Ser Thr Gly Tyr Ile Asp Asn Val Thr Leu Ile Ser Ala
355 360 365

Arg Pro Val Ser Gly Ala Pro Ala Pro Trp Val Glu Gln Cys Ile Cys
370 375 380

Pro Val Gly Tyr Lys Gly Gln Phe Cys Gln Asp Cys Ala Ser Gly Tyr
385 390 395 400

Lys Arg Asp Ser Ala Arg Leu Gly Pro Phe Gly Thr Cys Ile Pro Cys
405 410 415

Asn Cys Gln Gly Gly Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys Tyr
420 425 430

Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly
435 440 445

Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys
450 455 460

His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val
465 470 475 480

Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys
485 490 495

Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg
500 505 510

Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser
515 520 525

```
Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn
    530                 535                 540

Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp
545                 550                 555                 560

Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn
                565                 570                 575

Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val
            580                 585                 590

Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala Phe Ser
        595                 600                 605

Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln Phe Met
    610                 615                 620

Gln Gln Leu Gln Arg Met Glu Ala Leu Ile Ser Lys Ala Gln Gly Gly
625                 630                 635                 640

Asp Gly Val Val Pro Asp Thr Glu Leu Glu Gly Arg Met Gln Gln Ala
                645                 650                 655

Glu Gln Ala Leu Gln Asp Ile Leu Arg Asp Ala Gln Ile Ser Glu Gly
            660                 665                 670

Ala Ser Arg Ser Leu Gly Leu Gln Leu Ala Lys Val Arg Ser Gln Glu
        675                 680                 685

Asn Ser Tyr Gln Ser Arg Leu Asp Asp Leu Lys Met Thr Val Glu Arg
    690                 695                 700

Val Arg Ala Leu Gly Ser Gln Tyr Gln Asn Arg Val Arg Asp Thr His
705                 710                 715                 720

Arg Leu Ile Thr Gln Met Gln Leu Ser Leu Ala Glu Ser Glu Ala Ser
                725                 730                 735

Leu Gly Asn Thr Asn Ile Pro Ala Ser Asp His Tyr Val Gly Pro Asn
            740                 745                 750

Gly Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Leu Ala Glu Ser His
        755                 760                 765

Val Glu Ser Ala Ser Asn Met Glu Gln Leu Thr Arg Glu Thr Glu Asp
    770                 775                 780
```

```
Tyr Ser Lys Gln Ala Leu Ser Leu Val Arg Lys Ala Leu His Glu Gly
785                 790                 795                 800

Val Gly Ser Gly Ser Gly Ser Pro Asp Gly Ala Val Val Gln Gly Leu
                805                 810                 815

Val Glu Lys Leu Glu Lys Thr Lys Ser Leu Ala Gln Gln Leu Thr Arg
            820                 825                 830

Glu Ala Thr Gln Ala Glu Ile Glu Ala Asp Arg Ser Tyr Gln His Ser
        835                 840                 845

Leu Arg Leu Leu Asp Ser Val Ser Pro Leu Gln Gly Val Ser Asp Gln
    850                 855                 860

Ser Phe Gln Val Glu Glu Ala Lys Arg Ile Lys Gln Lys Ala Asp Ser
865                 870                 875                 880

Leu Ser Ser Leu Val Thr Arg His Met Asp Glu Phe Lys Arg Thr Gln
                885                 890                 895

Lys Asn Leu Gly Asn Trp Lys Glu Glu Ala Gln Gln Leu Leu Gln Asn
            900                 905                 910

Gly Lys Ser Gly Arg Glu Lys Ser Asp Gln Leu Leu Ser Arg Ala Asn
        915                 920                 925

Leu Ala Lys Ser Arg Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr
    930                 935                 940

Phe Tyr Glu Val Glu Ser Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu
945                 950                 955                 960

Gln Val Asp Asn Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu
                965                 970                 975

Ser Tyr Ile Ser Gln Lys Val Ser Asp Ala Ser Asp Lys Thr Gln Gln
            980                 985                 990

Ala Glu Arg Ala Leu Gly Ser Ala  Ala Ala Asp Ala Gln  Arg Ala Lys
        995                 1000                1005

Asn Gly  Ala Gly Glu Ala Leu  Glu Ile Ser Ser Glu  Ile Glu Gln
    1010                1015                1020

Glu Ile  Gly Ser Leu Asn Leu  Glu Ala Asn Val Thr  Ala Asp Gly
    1025                1030                1035

Ala Leu  Ala Met Glu Lys Gly  Leu Ala Ser Leu Lys  Ser Glu Met
    1040                1045                1050
```

Arg Glu Val Glu Gly Glu Leu Glu Arg Lys Glu Leu Glu Phe Asp
1055 1060 1065

Thr Asn Met Asp Ala Val Gln Met Val Ile Thr Glu Ala Gln Lys
1070 1075 1080

Val Asp Thr Arg Ala Lys Asn Ala Gly Val Thr Ile Gln Asp Thr
1085 1090 1095

Leu Asn Thr Leu Asp Gly Leu Leu His Leu Met Asp Gln Pro Leu
1100 1105 1110

Ser Val Asp Glu Glu Gly Leu Val Leu Leu Glu Gln Lys Leu Ser
1115 1120 1125

Arg Ala Lys Thr Gln Ile Asn Ser Gln Leu Arg Pro Met Met Ser
1130 1135 1140

Glu Leu Glu Glu Arg Ala Arg Gln Gln Arg Gly His Leu His Leu
1145 1150 1155

Leu Glu Thr Ser Ile Asp Gly Ile Leu Ala Asp Val Lys Asn Leu
1160 1165 1170

Glu Asn Ile Arg Asp Asn Leu Pro Pro Gly Cys Tyr Asn Thr Gln
1175 1180 1185

Ala Leu Glu Gln Gln
1190

<210> 3
<211> 4316
<212> DNA
<213> Homo sapiens

<220>
<221> sig_peptide
<222> (118)..(183)

<220>
<221> CDS
<222> (118)..(3453)

<220>
<221> repeat_unit
<222> (4021)..(4316)

<220>
<221> polyA_site
<222> (4296)..(4316)

<400> 3
gaccacctga tcgaaggaaa aggaaggcac agcggagcgc agagtgagaa ccaccaaccg 60

```
aggcgccggg cagcgacccc tgcagcggag acagagactg agcggcccgg caccgcc                117

atg cct gcg ctc tgg ctg ggc tgc tgc ctc tgc ttc tcg ctc ctc ctg               165
Met Pro Ala Leu Trp Leu Gly Cys Cys Leu Cys Phe Ser Leu Leu Leu
1               5                   10                  15

ccc gca gcc cgg gcc acc tcc agg agg gaa gtc tgt gat tgc aat ggg               213
Pro Ala Ala Arg Ala Thr Ser Arg Arg Glu Val Cys Asp Cys Asn Gly
            20                  25                  30

aag tcc agg cag tgt atc ttt gat cgg gaa ctt cac aga caa act ggt               261
Lys Ser Arg Gln Cys Ile Phe Asp Arg Glu Leu His Arg Gln Thr Gly
        35                  40                  45

aat gga ttc cgc tgc ctc aac tgc aat gac aac act gat ggc att cac               309
Asn Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn Thr Asp Gly Ile His
    50                  55                  60

tgc gag aag tgc aag aat ggc ttt tac cgg cac aga gaa agg gac cgc               357
Cys Glu Lys Cys Lys Asn Gly Phe Tyr Arg His Arg Glu Arg Asp Arg
65                  70                  75                  80

tgt ttg ccc tgc aat tgt aac tcc aaa ggt tct ctt agt gct cga tgt               405
Cys Leu Pro Cys Asn Cys Asn Ser Lys Gly Ser Leu Ser Ala Arg Cys
                85                  90                  95

gac aac tct gga cgg tgc agc tgt aaa cca ggt gtg aca gga gcc aga               453
Asp Asn Ser Gly Arg Cys Ser Cys Lys Pro Gly Val Thr Gly Ala Arg
            100                 105                 110

tgc gac cga tgt ctg cca ggc ttc cac atg ctc acg gat gcg ggg tgc               501
Cys Asp Arg Cys Leu Pro Gly Phe His Met Leu Thr Asp Ala Gly Cys
        115                 120                 125

acc caa gac cag aga ctg cta gac tcc aag tgt gac tgt gac cca gct               549
Thr Gln Asp Gln Arg Leu Leu Asp Ser Lys Cys Asp Cys Asp Pro Ala
    130                 135                 140

ggc atc gca ggg ccc tgt gac gcg ggc cgc tgt gtc tgc aag cca gct               597
Gly Ile Ala Gly Pro Cys Asp Ala Gly Arg Cys Val Cys Lys Pro Ala
145                 150                 155                 160

gtt act gga gaa cgc tgt gat agg tgt cga tca ggt tac tat aat ctg               645
Val Thr Gly Glu Arg Cys Asp Arg Cys Arg Ser Gly Tyr Tyr Asn Leu
                165                 170                 175

gat ggg ggg aac cct gag ggc tgt acc cag tgt ttc tgc tat ggg cat               693
Asp Gly Gly Asn Pro Glu Gly Cys Thr Gln Cys Phe Cys Tyr Gly His
            180                 185                 190

tca gcc agc tgc cgc agc tct gca gaa tac agt gtc cat aag atc acc               741
Ser Ala Ser Cys Arg Ser Ser Ala Glu Tyr Ser Val His Lys Ile Thr
        195                 200                 205

tct acc ttt cat caa gat gtt gat ggc tgg aag gct gtc caa cga aat               789
Ser Thr Phe His Gln Asp Val Asp Gly Trp Lys Ala Val Gln Arg Asn
    210                 215                 220

ggg tct cct gca aag ctc caa tgg tca cag cgc cat caa gat gtg ttt               837
Gly Ser Pro Ala Lys Leu Gln Trp Ser Gln Arg His Gln Asp Val Phe
225                 230                 235                 240

agc tca gcc caa cga cta gat cct gtc tat ttt gtg gct cct gcc aaa               885
Ser Ser Ala Gln Arg Leu Asp Pro Val Tyr Phe Val Ala Pro Ala Lys
                245                 250                 255
```

```
ttt ctt ggg aat caa cag gtg agc tat ggg caa agc ctg tcc ttt gac      933
Phe Leu Gly Asn Gln Gln Val Ser Tyr Gly Gln Ser Leu Ser Phe Asp
            260                 265                 270

tac cgt gtg gac aga gga ggc aga cac cca tct gcc cat gat gtg atc      981
Tyr Arg Val Asp Arg Gly Gly Arg His Pro Ser Ala His Asp Val Ile
        275                 280                 285

ctg gaa ggt gct ggt cta cgg atc aca gct ccc ttg atg cca ctt ggc     1029
Leu Glu Gly Ala Gly Leu Arg Ile Thr Ala Pro Leu Met Pro Leu Gly
    290                 295                 300

aag aca ctg cct tgt ggg ctc acc aag act tac aca ttc agg tta aat     1077
Lys Thr Leu Pro Cys Gly Leu Thr Lys Thr Tyr Thr Phe Arg Leu Asn
305                 310                 315                 320

gag cat cca agc aat aat tgg agc ccc cag ctg agt tac ttt gag tat     1125
Glu His Pro Ser Asn Asn Trp Ser Pro Gln Leu Ser Tyr Phe Glu Tyr
                325                 330                 335

cga agg tta ctg cgg aat ctc aca gcc ctc cgc atc cga gct aca tat     1173
Arg Arg Leu Leu Arg Asn Leu Thr Ala Leu Arg Ile Arg Ala Thr Tyr
            340                 345                 350

gga gaa tac agt act ggg tac att gac aat gtg acc ctg att tca gcc     1221
Gly Glu Tyr Ser Thr Gly Tyr Ile Asp Asn Val Thr Leu Ile Ser Ala
        355                 360                 365

cgc cct gtc tct gga gcc cca gca ccc tgg gtt gaa cag tgt ata tgt     1269
Arg Pro Val Ser Gly Ala Pro Ala Pro Trp Val Glu Gln Cys Ile Cys
    370                 375                 380

cct gtt ggg tac aag ggg caa ttc tgc cag gat tgt gct tct ggc tac     1317
Pro Val Gly Tyr Lys Gly Gln Phe Cys Gln Asp Cys Ala Ser Gly Tyr
385                 390                 395                 400

aag aga gat tca gcg aga ctg ggg cct ttt ggc acc tgt att cct tgt     1365
Lys Arg Asp Ser Ala Arg Leu Gly Pro Phe Gly Thr Cys Ile Pro Cys
                405                 410                 415

aac tgt caa ggg gga ggg gcc tgt gat cca gac aca gga gat tgt tat     1413
Asn Cys Gln Gly Gly Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys Tyr
            420                 425                 430

tca ggg gat gag aat cct gac att gag tgt gct gac tgc cca att ggt     1461
Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly
        435                 440                 445

ttc tac aac gat ccg cac gac ccc cgc agc tgc aag cca tgt ccc tgt     1509
Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys
    450                 455                 460

cat aac ggg ttc agc tgc tca gtg att ccg gag acg gag gag gtg gtg     1557
His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val
465                 470                 475                 480

tgc aat aac tgc cct ccc ggg gtc acc ggt gcc cgc tgt gag ctc tgt     1605
Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys
                485                 490                 495

gct gat ggc tac ttt ggg gac ccc ttt ggt gaa cat ggc cca gtg agg     1653
Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg
            500                 505                 510

cct tgt cag ccc tgt caa tgc aac agc aat gtg gac ccc agt gcc tct     1701
```

```
Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser
        515                 520                 525

ggg aat tgt gac cgg ctg aca ggc agg tgt ttg aag tgt atc cac aac      1749
Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn
    530                 535                 540

aca gcc ggc atc tac tgc gac cag tgc aaa gca ggc tac ttc ggg gac      1797
Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp
545                 550                 555                 560

cca ttg gct ccc aac cca gca gac aag tgt cga gct tgc aac tgt aac      1845
Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn
                565                 570                 575

ccc atg ggc tca gag cct gta gga tgt cga agt gat ggc acc tgt gtt      1893
Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val
            580                 585                 590

tgc aag cca gga ttt ggt ggc ccc aac tgt gag cat gga gca ttc agc      1941
Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala Phe Ser
        595                 600                 605

tgt cca gct tgc tat aat caa gtg aag att cag atg gat cag ttt atg      1989
Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln Phe Met
    610                 615                 620

cag cag ctt cag aga atg gag gcc ctg att tca aag gct cag ggt ggt      2037
Gln Gln Leu Gln Arg Met Glu Ala Leu Ile Ser Lys Ala Gln Gly Gly
625                 630                 635                 640

gat gga gta gta cct gat aca gag ctg gaa ggc agg atg cag cag gct      2085
Asp Gly Val Val Pro Asp Thr Glu Leu Glu Gly Arg Met Gln Gln Ala
                645                 650                 655

gag cag gcc ctt cag gac att ctg aga gat gcc cag att tca gaa ggt      2133
Glu Gln Ala Leu Gln Asp Ile Leu Arg Asp Ala Gln Ile Ser Glu Gly
            660                 665                 670

gct agc aga tcc ctt ggt ctc cag ttg gcc aag gtg agg agc caa gag      2181
Ala Ser Arg Ser Leu Gly Leu Gln Leu Ala Lys Val Arg Ser Gln Glu
        675                 680                 685

aac agc tac cag agc cgc ctg gat gac ctc aag atg act gtg gaa aga      2229
Asn Ser Tyr Gln Ser Arg Leu Asp Asp Leu Lys Met Thr Val Glu Arg
    690                 695                 700

gtt cgg gct ctg gga agt cag tac cag aac cga gtt cgg gat act cac      2277
Val Arg Ala Leu Gly Ser Gln Tyr Gln Asn Arg Val Arg Asp Thr His
705                 710                 715                 720

agg ctc atc act cag atg cag ctg agc ctg gca gaa agt gaa gct tcc      2325
Arg Leu Ile Thr Gln Met Gln Leu Ser Leu Ala Glu Ser Glu Ala Ser
                725                 730                 735

ttg gga aac act aac att cct gcc tca gac cac tac gtg ggg cca aat      2373
Leu Gly Asn Thr Asn Ile Pro Ala Ser Asp His Tyr Val Gly Pro Asn
            740                 745                 750

ggc ttt aaa agt ctg gct cag gag gcc aca aga tta gca gaa agc cac      2421
Gly Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Leu Ala Glu Ser His
        755                 760                 765

gtt gag tca gcc agt aac atg gag caa ctg aca agg gaa act gag gac      2469
Val Glu Ser Ala Ser Asn Met Glu Gln Leu Thr Arg Glu Thr Glu Asp
    770                 775                 780
```

```
tat tcc aaa caa gcc ctc tca ctg gtg cgc aag gcc ctg cat gaa gga      2517
Tyr Ser Lys Gln Ala Leu Ser Leu Val Arg Lys Ala Leu His Glu Gly
785                 790                 795                 800

gtc gga agc gga agc ggt agc ccg gac ggt gct gtg gtg caa ggg ctt      2565
Val Gly Ser Gly Ser Gly Ser Pro Asp Gly Ala Val Val Gln Gly Leu
                805                 810                 815

gtg gaa aaa ttg gag aaa acc aag tcc ctg gcc cag cag ttg aca agg      2613
Val Glu Lys Leu Glu Lys Thr Lys Ser Leu Ala Gln Gln Leu Thr Arg
            820                 825                 830

gag gcc act caa gcg gaa att gaa gca gat agg tct tat cag cac agt      2661
Glu Ala Thr Gln Ala Glu Ile Glu Ala Asp Arg Ser Tyr Gln His Ser
        835                 840                 845

ctc cgc ctc ctg gat tca gtg tct ccg ctt cag gga gtc agt gat cag      2709
Leu Arg Leu Leu Asp Ser Val Ser Pro Leu Gln Gly Val Ser Asp Gln
    850                 855                 860

tcc ttt cag gtg gaa gaa gca aag agg atc aaa caa aaa gcg gat tca      2757
Ser Phe Gln Val Glu Glu Ala Lys Arg Ile Lys Gln Lys Ala Asp Ser
865                 870                 875                 880

ctc tca agc ctg gta acc agg cat atg gat gag ttc aag cgt aca caa      2805
Leu Ser Ser Leu Val Thr Arg His Met Asp Glu Phe Lys Arg Thr Gln
                885                 890                 895

aag aat ctg gga aac tgg aaa gaa gaa gca cag cag ctc tta cag aat      2853
Lys Asn Leu Gly Asn Trp Lys Glu Glu Ala Gln Gln Leu Leu Gln Asn
            900                 905                 910

gga aaa agt ggg aga gag aaa tca gat cag ctg ctt tcc cgt gcc aat      2901
Gly Lys Ser Gly Arg Glu Lys Ser Asp Gln Leu Leu Ser Arg Ala Asn
        915                 920                 925

ctt gct aaa agc aga gca caa gaa gca ctg agt atg ggc aat gcc act      2949
Leu Ala Lys Ser Arg Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr
    930                 935                 940

ttt tat gaa gtt gag agc atc ctt aaa aac ctc aga gag ttt gac ctg      2997
Phe Tyr Glu Val Glu Ser Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu
945                 950                 955                 960

cag gtg gac aac aga aaa gca gaa gct gaa gaa gcc atg aag aga ctc      3045
Gln Val Asp Asn Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu
                965                 970                 975

tcc tac atc agc cag aag gtt tca gat gcc agt gac aag acc cag caa      3093
Ser Tyr Ile Ser Gln Lys Val Ser Asp Ala Ser Asp Lys Thr Gln Gln
            980                 985                 990

gca gaa aga gcc ctg ggg agc gct  gct gct gat gca cag  agg gca aag    3141
Ala Glu Arg Ala Leu Gly Ser Ala  Ala Ala Asp Ala Gln  Arg Ala Lys
        995                 1000                1005

aat ggg  gcc ggg gag gcc ctg  gaa atc tcc agt gag  att gaa cag      3186
Asn Gly  Ala Gly Glu Ala Leu  Glu Ile Ser Ser Glu  Ile Glu Gln
    1010                1015                1020

gag att  ggg agt ctg aac ttg  gaa gcc aat gtg aca  gca gat gga      3231
Glu Ile  Gly Ser Leu Asn Leu  Glu Ala Asn Val Thr  Ala Asp Gly
    1025                1030                1035

gcc ttg  gcc atg gaa aag gga  ctg gcc tct ctg aag  agt gag atg      3276
```

```
Ala Leu  Ala Met Glu Lys Gly  Leu Ala Ser Leu Lys  Ser Glu Met
    1040                 1045                 1050

agg gaa  gtg gaa gga gag ctg  gaa agg aag gag ctg  gag ttt gac      3321
Arg Glu  Val Glu Gly Glu Leu  Glu Arg Lys Glu Leu  Glu Phe Asp
    1055                 1060                 1065

acg aat  atg gat gca gta cag  atg gtg att aca gaa  gcc cag aag      3366
Thr Asn  Met Asp Ala Val Gln  Met Val Ile Thr Glu  Ala Gln Lys
    1070                 1075                 1080

gtt gat  acc aga gcc aag aac  gct ggg gtt aca atc  caa gac aca      3411
Val Asp  Thr Arg Ala Lys Asn  Ala Gly Val Thr Ile  Gln Asp Thr
    1085                 1090                 1095

ctc aac  aca tta gac ggc ctc  ctg cat ctg atg ggt  atg tga          3453
Leu Asn  Thr Leu Asp Gly Leu  Leu His Leu Met Gly  Met
    1100                 1105                 1110

acccacaacc cacaaccttc cagctccatg ctccagggct ttgctccaga acactcacta  3513

tacctagccc cagcaaaggg gagtctcagc tttccttaag gatatcagta aatgtgcttt  3573

gtttccaggc ccagataact ttcggcaggt tcccttacat ttactggacc ctgttttacc  3633

gttgctaaga tgggtcactg aacacctatt gcacttgggg gtaaaggtct gtgggccaaa  3693

gaacaggtgt atataagcaa cttcacagaa cacgagacag cttgggaatc ctgctaaaga  3753

gtctggcctg gaccctgaga agccagtgga cagttttaag cagaggaata acatcaccac  3813

tgtatatttc agaaagatca ctagggcagc cgagtggagg aaagcttgaa gaggggtta   3873

gagagaaggc aggttgagac tacttaagat attgttgaaa taattgaaga gagaaatgac  3933

aggagcctgc tctaaggcag tagaatggtg gctgggaaga tgtgaaggaa gattttccca  3993

gtctgtgaag tcaagaatca cttgccggcc gggtgtggtg gctcacgcct gtaattctag  4053

cactttggga gactgaagcg ggtggatcac cgaggtcag gagttgaaga ccagcctggc  4113

caacatggtg aaaccctgtc tctactaaaa gtacaaaaat tagctggatg atggtggtgg  4173

gcgcctgtaa ttccagctac tcaggagtct gaggcaggag aatcgcttga acccaggagg  4233

cgaggttaca gtgagccaag attgcaccac tgctcttcca gcctgggaac agagagactg  4293

cctaaaaaaa aaaaaaaaaa aaa                                          4316
```

<210> 4
<211> 1111
<212> PRT
<213> Homo sapiens

<400> 4

```
Met Pro Ala Leu Trp Leu Gly Cys Cys Leu Cys Phe Ser Leu Leu Leu
1               5                  10                  15

Pro Ala Ala Arg Ala Thr Ser Arg Arg Glu Val Cys Asp Cys Asn Gly
            20                  25                  30

Lys Ser Arg Gln Cys Ile Phe Asp Arg Glu Leu His Arg Gln Thr Gly
```

35 40 45

Asn Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn Thr Asp Gly Ile His
50 55 60

Cys Glu Lys Cys Lys Asn Gly Phe Tyr Arg His Arg Glu Arg Asp Arg
65 70 75 80

Cys Leu Pro Cys Asn Cys Asn Ser Lys Gly Ser Leu Ser Ala Arg Cys
85 90 95

Asp Asn Ser Gly Arg Cys Ser Cys Lys Pro Gly Val Thr Gly Ala Arg
100 105 110

Cys Asp Arg Cys Leu Pro Gly Phe His Met Leu Thr Asp Ala Gly Cys
115 120 125

Thr Gln Asp Gln Arg Leu Leu Asp Ser Lys Cys Asp Cys Asp Pro Ala
130 135 140

Gly Ile Ala Gly Pro Cys Asp Ala Gly Arg Cys Val Cys Lys Pro Ala
145 150 155 160

Val Thr Gly Glu Arg Cys Asp Arg Cys Arg Ser Gly Tyr Tyr Asn Leu
165 170 175

Asp Gly Gly Asn Pro Glu Gly Cys Thr Gln Cys Phe Cys Tyr Gly His
180 185 190

Ser Ala Ser Cys Arg Ser Ser Ala Glu Tyr Ser Val His Lys Ile Thr
195 200 205

Ser Thr Phe His Gln Asp Val Asp Gly Trp Lys Ala Val Gln Arg Asn
210 215 220

Gly Ser Pro Ala Lys Leu Gln Trp Ser Gln Arg His Gln Asp Val Phe
225 230 235 240

Ser Ser Ala Gln Arg Leu Asp Pro Val Tyr Phe Val Ala Pro Ala Lys
245 250 255

Phe Leu Gly Asn Gln Gln Val Ser Tyr Gly Gln Ser Leu Ser Phe Asp
260 265 270

Tyr Arg Val Asp Arg Gly Gly Arg His Pro Ser Ala His Asp Val Ile
275 280 285

Leu Glu Gly Ala Gly Leu Arg Ile Thr Ala Pro Leu Met Pro Leu Gly
290 295 300

Lys Thr Leu Pro Cys Gly Leu Thr Lys Thr Tyr Thr Phe Arg Leu Asn
305 310 315 320

Glu His Pro Ser Asn Asn Trp Ser Pro Gln Leu Ser Tyr Phe Glu Tyr
325 330 335

Arg Arg Leu Leu Arg Asn Leu Thr Ala Leu Arg Ile Arg Ala Thr Tyr
340 345 350

Gly Glu Tyr Ser Thr Gly Tyr Ile Asp Asn Val Thr Leu Ile Ser Ala
355 360 365

Arg Pro Val Ser Gly Ala Pro Ala Pro Trp Val Glu Gln Cys Ile Cys
370 375 380

Pro Val Gly Tyr Lys Gly Gln Phe Cys Gln Asp Cys Ala Ser Gly Tyr
385 390 395 400

Lys Arg Asp Ser Ala Arg Leu Gly Pro Phe Gly Thr Cys Ile Pro Cys
405 410 415

Asn Cys Gln Gly Gly Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys Tyr
420 425 430

Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly
435 440 445

Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys
450 455 460

His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val
465 470 475 480

Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys
485 490 495

Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg
500 505 510

Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser
515 520 525

Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn
530 535 540

Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp
545 550 555 560

Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn

565 570 575

Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val
580 585 590

Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala Phe Ser
595 600 605

Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln Phe Met
610 615 620

Gln Gln Leu Gln Arg Met Glu Ala Leu Ile Ser Lys Ala Gln Gly Gly
625 630 635 640

Asp Gly Val Val Pro Asp Thr Glu Leu Glu Gly Arg Met Gln Gln Ala
645 650 655

Glu Gln Ala Leu Gln Asp Ile Leu Arg Asp Ala Gln Ile Ser Glu Gly
660 665 670

Ala Ser Arg Ser Leu Gly Leu Gln Leu Ala Lys Val Arg Ser Gln Glu
675 680 685

Asn Ser Tyr Gln Ser Arg Leu Asp Asp Leu Lys Met Thr Val Glu Arg
690 695 700

Val Arg Ala Leu Gly Ser Gln Tyr Gln Asn Arg Val Arg Asp Thr His
705 710 715 720

Arg Leu Ile Thr Gln Met Gln Leu Ser Leu Ala Glu Ser Glu Ala Ser
725 730 735

Leu Gly Asn Thr Asn Ile Pro Ala Ser Asp His Tyr Val Gly Pro Asn
740 745 750

Gly Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Leu Ala Glu Ser His
755 760 765

Val Glu Ser Ala Ser Asn Met Glu Gln Leu Thr Arg Glu Thr Glu Asp
770 775 780

Tyr Ser Lys Gln Ala Leu Ser Leu Val Arg Lys Ala Leu His Glu Gly
785 790 795 800

Val Gly Ser Gly Ser Gly Ser Pro Asp Gly Ala Val Val Gln Gly Leu
805 810 815

Val Glu Lys Leu Glu Lys Thr Lys Ser Leu Ala Gln Gln Leu Thr Arg
820 825 830

Glu Ala Thr Gln Ala Glu Ile Glu Ala Asp Arg Ser Tyr Gln His Ser
835 840 845

Leu Arg Leu Leu Asp Ser Val Ser Pro Leu Gln Gly Val Ser Asp Gln
850 855 860

Ser Phe Gln Val Glu Glu Ala Lys Arg Ile Lys Gln Lys Ala Asp Ser
865 870 875 880

Leu Ser Ser Leu Val Thr Arg His Met Asp Glu Phe Lys Arg Thr Gln
885 890 895

Lys Asn Leu Gly Asn Trp Lys Glu Glu Ala Gln Gln Leu Leu Gln Asn
900 905 910

Gly Lys Ser Gly Arg Glu Lys Ser Asp Gln Leu Leu Ser Arg Ala Asn
915 920 925

Leu Ala Lys Ser Arg Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr
930 935 940

Phe Tyr Glu Val Glu Ser Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu
945 950 955 960

Gln Val Asp Asn Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu
965 970 975

Ser Tyr Ile Ser Gln Lys Val Ser Asp Ala Ser Asp Lys Thr Gln Gln
980 985 990

Ala Glu Arg Ala Leu Gly Ser Ala Ala Ala Asp Ala Gln Arg Ala Lys
995 1000 1005

Asn Gly Ala Gly Glu Ala Leu Glu Ile Ser Ser Glu Ile Glu Gln
1010 1015 1020

Glu Ile Gly Ser Leu Asn Leu Glu Ala Asn Val Thr Ala Asp Gly
1025 1030 1035

Ala Leu Ala Met Glu Lys Gly Leu Ala Ser Leu Lys Ser Glu Met
1040 1045 1050

Arg Glu Val Glu Gly Glu Leu Glu Arg Lys Glu Leu Glu Phe Asp
1055 1060 1065

Thr Asn Met Asp Ala Val Gln Met Val Ile Thr Glu Ala Gln Lys
1070 1075 1080

Val Asp Thr Arg Ala Lys Asn Ala Gly Val Thr Ile Gln Asp Thr

1085 1090 1095

Leu Asn Thr Leu Asp Gly Leu Leu His Leu Met Gly Met
1100 1105 1110

<210> 5
<211> 227
<212> PRT
<213> Homo sapiens

<400> 5

Cys Ile Cys Pro Val Gly Tyr Lys Gly Gln Phe Cys Gln Asp Cys Ala
1 5 10 15

Ser Gly Tyr Lys Arg Asp Ser Ala Arg Leu Gly Pro Phe Gly Thr Cys
20 25 30

Ile Pro Cys Asn Cys Gln Gly Gly Gly Ala Cys Asp Pro Asp Thr Gly
35 40 45

Asp Cys Tyr Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys
50 55 60

Pro Ile Gly Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro
65 70 75 80

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
85 90 95

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
100 105 110

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
115 120 125

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
130 135 140

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
145 150 155 160

Ile His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr
165 170 175

Phe Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys
180 185 190

Asn Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly
195 200 205

Thr Cys Val Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly
210 215 220

Ala Phe Ser
225

<210> 6
<211> 174
<212> PRT
<213> Homo sapiens

<400> 6

Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1 5 10 15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
20 25 30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
35 40 45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
50 55 60

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65 70 75 80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
85 90 95

Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala
100 105 110

Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu
115 120 125

Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn Pro Met
130 135 140

Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val Cys Lys
145 150 155 160

Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala Phe Ser
165 170

<210> 7
<211> 168
<212> PRT
<213> Homo sapiens

<400> 7

```
Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1               5                  10                  15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
            20                  25                  30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
        35                  40                  45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
    50                  55                  60

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65                  70                  75                  80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
                85                  90                  95

Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala
            100                 105                 110

Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu
        115                 120                 125

Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn Pro Met
    130                 135                 140

Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val Cys Lys
145                 150                 155                 160

Pro Gly Phe Gly Gly Pro Asn Cys
                165
```

<210> 8
<211> 156
<212> PRT
<213> Homo sapiens

<400> 8

```
Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1               5                  10                  15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
            20                  25                  30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
        35                  40                  45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
    50                  55                  60
```

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65 70 75 80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
85 90 95

Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala
100 105 110

Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu
115 120 125

Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn Pro Met
130 135 140

Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr
145 150 155

<210> 9
<211> 138
<212> PRT
<213> Homo sapiens

<400> 9

Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1 5 10 15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
20 25 30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
35 40 45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
50 55 60

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65 70 75 80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
85 90 95

Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala
100 105 110

Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu
115 120 125

Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala
130 135

<210> 10
<211> 133
<212> PRT
<213> Homo sapiens

<400> 10

Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1 5 10 15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
20 25 30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
35 40 45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
50 55 60

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65 70 75 80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
85 90 95

Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala
100 105 110

Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu
115 120 125

Ala Pro Asn Pro Ala
130

<210> 11
<211> 116
<212> PRT
<213> Homo sapiens

<400> 11

Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1 5 10 15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
20 25 30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
35 40 45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
50 55 60

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65 70 75 80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
85 90 95

Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala
100 105 110

Gly Ile Tyr Cys
115

<210> 12
<211> 100
<212> PRT
<213> Homo sapiens

<400> 12

Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr
1 5 10 15

Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn
20 25 30

Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn
35 40 45

Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp
50 55 60

Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys
65 70 75 80

Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn
85 90 95

Cys Asp Arg Leu
100

<210> 13
<211> 141
<212> PRT
<213> Homo sapiens

<400> 13

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
65 70 75 80

Ile His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr
85 90 95

Phe Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys
100 105 110

Asn Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly
115 120 125

Thr Cys Val Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys
130 135 140

<210> 14
<211> 141
<212> PRT
<213> Homo sapiens

<400> 14

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
65 70 75 80

Ile His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr
85 90 95

Phe Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys
100 105 110

Asn Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly

115 120 125

Thr Cys Val Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys
130 135 140

<210> 15
<211> 129
<212> PRT
<213> Homo sapiens

<400> 15

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
65 70 75 80

Ile His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr
85 90 95

Phe Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys
100 105 110

Asn Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly
115 120 125

Thr

<210> 16
<211> 111
<212> PRT
<213> Homo sapiens

<400> 16

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly

35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
65 70 75 80

Ile His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr
85 90 95

Phe Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala
100 105 110

<210> 17
<211> 106
<212> PRT
<213> Homo sapiens

<400> 17

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
65 70 75 80

Ile His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr
85 90 95

Phe Gly Asp Pro Leu Ala Pro Asn Pro Ala
100 105

<210> 18
<211> 89
<212> PRT
<213> Homo sapiens

<400> 18

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys

20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys
65 70 75 80

Ile His Asn Thr Ala Gly Ile Tyr Cys
85

<210> 19
<211> 73
<212> PRT
<213> Homo sapiens

<400> 19

Cys Pro Cys His Asn Gly Phe Ser Cys Ser Val Ile Pro Glu Thr Glu
1 5 10 15

Glu Val Val Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys
20 25 30

Glu Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly
35 40 45

Pro Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro
50 55 60

Ser Ala Ser Gly Asn Cys Asp Arg Leu
65 70

<210> 20
<211> 114
<212> PRT
<213> Homo sapiens

<400> 20

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser
20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile
35 40 45

His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe

50 55 60

Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn
65 70 75 80

Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr
85 90 95

Cys Val Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala
100 105 110

Phe Ser

<210> 21
<211> 108
<212> PRT
<213> Homo sapiens

<400> 21

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser
20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile
35 40 45

His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe
50 55 60

Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn
65 70 75 80

Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr
85 90 95

Cys Val Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys
100 105

<210> 22
<211> 96
<212> PRT
<213> Homo sapiens

<400> 22

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser

20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile
35 40 45

His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe
50 55 60

Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn
65 70 75 80

Cys Asn Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr
85 90 95

<210> 23
<211> 78
<212> PRT
<213> Homo sapiens

<400> 23

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser
20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile
35 40 45

His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe
50 55 60

Gly Asp Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala
65 70 75

<210> 24
<211> 73
<212> PRT
<213> Homo sapiens

<400> 24

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser
20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile
35 40 45

His Asn Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe

50 55 60

Gly Asp Pro Leu Ala Pro Asn Pro Ala
65 70

<210> 25
<211> 56
<212> PRT
<213> Homo sapiens

<400> 25

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser
20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile
35 40 45

His Asn Thr Ala Gly Ile Tyr Cys
50 55

<210> 26
<211> 40
<212> PRT
<213> Homo sapiens

<400> 26

Leu Cys Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro
1 5 10 15

Val Arg Pro Cys Gln Pro Cys Gln Cys Asn Ser Asn Val Asp Pro Ser
20 25 30

Ala Ser Gly Asn Cys Asp Arg Leu
35 40

<210> 27
<211> 177
<212> PRT
<213> Homo sapiens

<400> 27

Gln Phe Cys Gln Asp Cys Ala Ser Gly Tyr Lys Arg Asp Ser Ala Arg
1 5 10 15

Leu Gly Pro Phe Gly Thr Cys Ile Pro Cys Asn Cys Gln Gly Gly Gly
20 25 30

Ala Cys Asp Pro Asp Thr Gly Asp Cys Tyr Ser Gly Asp Glu Asn Pro
35 40 45

```
Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr Asn Asp Pro His
     50                  55                  60

Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn Gly Phe Ser Cys
65                   70                  75                  80

Ser Val Ile Pro Glu Thr Glu Glu Val Val Cys Asn Asn Cys Pro Pro
                85                  90                  95

Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp Gly Tyr Phe Gly
            100                 105                 110

Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys Gln Pro Cys Gln
        115                 120                 125

Cys Asn Ser Asn Val Asp Pro Ser Ala Ser Gly Asn Cys Asp Arg Leu
    130                 135                 140

Thr Gly Arg Cys Leu Lys Cys Ile His Asn Thr Ala Gly Ile Tyr Cys
145                 150                 155                 160

Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu Ala Pro Asn Pro
                165                 170                 175

Ala
```